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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/669,808 | 09/25/2003 | Werner Mezger | R 303070 | 5443 |

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| EXAMINER |
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| CHANG, CHING |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3748 | |

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DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/669,808 | MEZGER ET AL. | |
| | Examiner | Art Unit | |
| | Ching Chang | 3748 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ***Claims 1-4, 6, 8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al. (US Patent 5,628,286).***

Kato discloses a method for controlling the position of a camshaft actuator (30, 42), the method comprising the steps of: controlling the position of a camshaft (14) with respect to a reference position (through 19, 17 to 4) utilizing said camshaft actuator in dependence upon an actual position (VT) of said camshaft and in dependence upon a determined desired position (TVT) of said camshaft; determining a precontrol component (See Figs. 4 and 6) based on state quantities characterizing the operation of said camshaft actuator; and, determining an actuating signal (from 50 through 55) for driving said camshaft actuator from said desired position and an actual position of said camshaft while considering said precontrol component; wherein said camshaft actuator is in an internal combustion engine including an internal combustion engine of a motor vehicle; comprising the further step of determining said precontrol component based on

selected ones of said state quantities (See Fig. 3) which represent the state of the hydraulic liquid (through 41, 42, into 36, 37) which effects an actuating movement of said camshaft actuator; wherein the state quantities, which represent said hydraulic liquid, include at least one of the pressure and temperature (through 63) thereof; further comprising the step of detecting at least a portion of said state quantities via sensors (58, 63); further comprising, as said precontrol quantity, a signal by which said actuating signal is changed; wherein said actuating signal is changed via an additive or multiplicative logic operation (See Col. 7, line 16 through Col. 12, line 7); wherein said actuating signal is a clock signal for the actuation of an electromagnetically actuated switch valve (42, 41)opening a fluid path; and, the pulse-duty factor (DVT) is changed because of the precontrol when supplying current for opening a valve.

3. ***Claims 1-2, and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Meyer et al. (US Patent 417,187).***

Meyer discloses a method for controlling the position of a camshaft actuator (11), the method comprising the steps of: controlling the position of a camshaft () with respect to a reference position (through 12) utilizing said camshaft actuator in dependence upon an actual position (through 13) of said camshaft and in dependence upon a determined desired position ($\alpha_{13}$ESTIMATED) of said camshaft; determining a precontrol component (in 16; See Figs. 2A-6) based on state quantities characterizing the operation of said camshaft actuator; and, determining an actuating signal (from 14 through 16) for driving said camshaft actuator from said desired position and an actual position of said camshaft while considering said precontrol component; wherein said

camshaft actuator is in an internal combustion engine including an internal combustion engine of a motor vehicle; further comprising the step of detecting at least a portion of said state quantities via sensors (12, 13); further comprising, as said precontrol quantity, a signal by which said actuating signal is changed; wherein said actuating signal is changed via an additive or multiplicative logic operation; further comprising the step of deriving at least a portion of said state quantities from other quantities measured by sensors with the determination of the state quantities being model supported or being from corresponding characteristic lines (See Col. 3, line 38 through line 55).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. ***Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (as applied to claim 2 above) in view of Boie et al. (US Patent 6,340,008).***

Kato discloses the invention, however, fails to disclose one of said state quantities utilized in determining said precontrol component being the on-board voltage.

The patent to Boie on the other hand, teaches that it is conventional in the engine controller art, to utilize a control signal in the form of a voltage from an on-board network to quick control an engine valve actuator (See Col. 4, line 22 through line 53).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the control signal in the form of an on-board voltage as taught by Boie in the Kato method, since the use thereof would provide improved method to control engine camshaft position more effectively.

6. ***Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (as applied to claim 2 above) in view of Meyer et al. (US Patent 5,417,187).***

Meyer discloses the invention, however, fails to disclose a step of deriving at least a portion of said state quantities from other quantities measured by sensors with the determination of the state quantities being model supported or being from corresponding characteristic lines.

The patent to Meyer on the other hand, teaches that it is conventional in the camshaft angular position adjustment art, to utilize engine characteristics maps to derive the setpoint angular position of the camshaft corresponding to the current operating state of the engine (See Col. 3, line 38 through line 55).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the engine characteristics maps as taught by Meyer

in the Kato method, since the use thereof would provide a cost effective method to adjust an engine camshaft position.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (571)272-4857. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571)272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Ching Chang

THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700